

Herbicide Drift Risk Management Special Project Group Meeting

Friday, October 2, 2020

Sponsored by North Central IPM Center

Introductions and Sharing

Our October 2 online meeting drew in 33 attendees from nine of the north central IPM states (Ohio, Indiana, Michigan, Iowa, Illinois, Minnesota, Wisconsin, Missouri, and North Dakota), as well as NY, NJ, PA, TN, and NM. Most attendees were extension educators and researchers, but we also had representatives from a commodity group, a food processor, state and US departments of agriculture. [See full participant list.](#) Meeting attendees introduced themselves and shared notes on recent research and interests, as well as their state's drift situation. Attendees from Indiana, Michigan, Ohio, Minnesota, and Tennessee all shared anecdotal evidence that specialty growers are experiencing drift but not reporting it.

Educational Materials

There was no discussion on educational materials, but Cassy briefly discussed recent efforts and encouraged comments, suggestions, or sharing of other resources.

Grower Survey Development

The NC-IPM Center has funded a grower survey to assess the frequency and severity of herbicide drift on specialty crops. Cassy shared a timeline and ways the group could help with the survey, including providing feedback on the survey tool and promoting the survey at the state level.

Survey distribution funds are for North Central states only (OH, MI, IN, WI, IL, MN, IA, MO, ND, SD, KS, NE) but the survey tool could be adapted for use elsewhere. Doug encouraged individuals to seek additional funding for the survey.

Survey population

The study proposal suggested a mailed survey, possibly targeting specific subgroups (grape growers, organic growers, fresh market producers, etc.) and using a random sample from a purchased mailing list. (Purchased mailing lists are based on subscriptions, memberships, business information, etc. and tend to be 75-80% accurate.) Alternative methods discussed included surveying meeting attendees for a better response rate, surveying extension educators, or using state census or grower groups.

There was discussion on the target population for the survey. Is it better to sample a wide variety of specialty crop growers across the region or to focus on specific areas and/or commodities of known risk and/or economic importance? The sample population, sample size, and methods will impact the population we can extend the results to and the validity of those results. Careful selection will also influence response rates.

Comments

- Several participants felt the list should be stratified or structured in some way. A straightforward random regional survey might not reflect differences in states. Some states have a low usage of 2,4-D and dicamba, or a smaller specialty crops industry.
- Efforts should be made to have a large enough sample size to be able to focus on variations between states.
- Budget constraints may limit the number of surveys we can do. However, the group was encouraged to watch for and share opportunities for additional funding from commodity interest groups.

- Regional commodities of importance from the north central states represented: Grapes/wineries, tomatoes, cucurbits, apples/peaches, potatoes, small fruits, diversified vegetables, hops
- Nursery and ornamental growers are another group often affected (especially for Missouri, Tennessee, Oklahoma), but may be outside of our group's area of expertise.

Reducing Bias

The group also discussed the potential for bias. There are ways to test for bias in a survey, but it's important to know what to look for. These examples came up

- Organic growers might over-report damage due to unfamiliarity with drift symptoms or bias against pesticides.
- Growers who have experienced drift might be more likely to complete the survey.
- Surveys distributed at grower meetings might include disproportionate amounts of better educated growers, larger operations (or those closest to the meeting site).

Increasing Response Rate

It's well recognized that farmers suffer from survey fatigue.

- Work through grower organizations and state extension to promote the survey.
- Have survey out in time to promote/remind at January grower meetings.
- Surveying at the meetings was suggested
 - would likely increase response rate but would also change the sample population (X% of attendees reported damage, not X% of growers reported damage).
 - consider that many meetings will be moved online this winter
- Emphasize possible benefits from survey results. (Why should growers take time to fill out the survey). For example, might this change the way states handle the complaints process? Is someone from the EPA involved and interested in these results? Will it increase funding for research or compensatory programs that directly benefit growers?
- Incentive included in mailing.
- Purchase phone numbers to follow up with non-responders. (This is also a common method to measure respondent vs nonrespondent bias.)
- Be mindful of potential repercussions to growers and do everything possible to ensure anonymity. NOTE: several standard practices to increase response rate are built into the proposal: reminder mailing, online survey option, paid postage, winter timing, keep survey tool short, etc.

Additional Ideas

- Roger suggested talking to growers involved with processing vs. fresh market to be sure we are capturing the different concerns of these groups.
- Lynn S suggested surveying extension agents or crop consultants. Might have a better feel for a whole regional picture and concerns.

Next Steps

- Asked for a smaller group of 6-10 people to work on survey questions and then share with the group as a whole afterwards. Would likely involve 2-3 additional meetings.

Specific data points that need to be collected.

- Natalie felt we need to focus on all herbicides. She receives complaints about glyphosate and other products, not just dicamba and 2,4-D.
- Include a question on the reporting process. What would make it easier for growers to report? If they had damage and didn't report it, what reasons influenced this decision?
- Measure repeated exposure.

- Measure how many growers have specialty crops and row crops and might be using auxinic herbicides themselves.
- How often do growers pay for private residue analysis?

Research Group

Doug also invited a group to gather around related research questions. We are closing gap on sensitivity research, but there are many lingering questions. We need more traction on this drift issues around specialty crops. Even this group has had some trouble getting funding and attention. Residues are an issue, but also tracking the source. Leadership around this is needed.

Thierry and agreed – collaborating on research is a great idea. Exciting.

Steve Senseman agreed. Past WSSA work supports this. Suggested connecting with Jim Kells from WSSA. We don't have enough support for this type of research.

Next Steps

- Looking for people interested in developing our survey tool in the next two months.
- Also interested in putting together a group to discuss and promote additional research needs around herbicide drift.

Will share meeting notes next week and keep the conversation going.

Participant List

- **Cassy Brown**, Ohio State - communications, serving as group project manager
- **Doug Doohan**, Ohio State - weed science research and outreach for specialty crops, group leader and founding member of group
- **Cathy Herms**, Ohio State - works with Doug and Cassy in weed science
- **Maria Smith**, Ohio State - Extension grape specialist. She sees a lot of cases with grape growers in Ohio, but few report complaints.
- **Stephen Meyers**, Purdue - weed science research and outreach with specialty crops. Currently working on a residue study in collaboration with Red-Gold. Most complaint reports he has fielded this year were from homeowners, most producers suspected drift but it turned out to be something else. (One of Purdue's research plots was drifted on though).
- **Steve Smith**, Red Gold - field specialist for Red Gold, helped found Save Our Crops and Driftwatch.
- **Bill Johnson**, Purdue - Extension weed scientist. Works on weed management, stewardship information. For Indiana, few specialty crops complaints are turned in, but he suspect more are occurring.
- **Bryan Young**, Purdue - Researches off-target research with soybean board.
- **Laura Iles**, Iowa State, NC-IPM co-director - can help with printing and distribution and other project support
- **Prashant Jha**, Iowa State - Extension weed specialist at Iowa State since 2019. Most focus is on corn and soybean in Iowa. He did some trials this year and last year on drift. Iowa was worst year for drift complaints, comparable to some of the worst years in Arkansas.
- **Michele Wormund**, Missouri State - Recent work evaluating sensitivity and documenting drift damage at different rates on ornamental tree, fruit and nut species. Also recently reviewed determinant/indeterminant tomato varieties and their ability to outgrow drift damage.
- **Karla Gage**, Southern Illinois University - Carbondale - Recent work on drift with horseradish, pumpkins, hemp, and a group of native plants
- **Lindsay Orphan**, Illinois University - Carbondale - MS student, looking at cucurbit/pumpkin drift response.

- **Sushila Chaudhari**, Michigan State - Specialty crop weed management. Agrees that few cases are reported but more are happening. Thinks survey will help document this.
- **Roger Becker**, University of Minnesota - Works mostly with agronomic crops, some vegetable, but also forage crops. Has a long history of studying dicamba use in soybean.
- **Annie Klodd**, University of Minnesota - Works with grapes, apples, and other fruits. Currently evaluating drift sensitivity in cold-hardy grape varieties from Minnesota, focusing on yield impacts.
- **Natalie Hoidal**, Minnesota State – Works with specialty crops and reports a rough year regarding drift. She works mainly with fresh market growers. They have actually asked for a survey like this one. Growers worry about repercussions on the marketability of their crop. Survey could help make the case for helpful changes in drift reporting. She believes about ½ of vegetable crop growers in Minn. have been drifted on at. Extension specialists have a tough job giving recommendations to these growers.
- **Andy Robinson**, University Minnesota / North Dakota State - Extension specialist for potatoes. Looked at drift in soybeans during his graduate program at Purdue. Currently looking at various pesticides and the effect of drift on potatoes.
- **Harlene Hatterman-Valenti**, North Dakota State - Has researched off-target movement of glyphosate and dicamba, going back to her PhD work in the 80s. Focuses on specialty crops.
- **Rodrigo Werle**, University of Wisconsin - Extension weed specialist. Has been working on the effect of tank mixes and formulations on drift and volatility. Looking mainly at applications on soybeans, small grains. Also looking at efficacy on water hemp. He noted that Wisconsin adoption of over-the-top dicamba use has been slow. Wisconsin has more crop diversity and some co-ops are resistant to spraying dicamba.
- **Chad Hayes Tennessee DOA** - Ag pesticide coordinator for Tenn DOA. He has done a lot of outreach and work with UT Ext on the topic. Has seen and worked many complaints. Only 18 dicamba-related complaints this year (a little lower than previous year), but he thinks there's more damage than is being reported. Growers feel crops will grow out of it and don't want to cause trouble with neighboring growers. He does think outreach has helped number of incidents go down though.
- **Mark Powell, Tennessee DOA** - Supports Chad. Chad does a lot of work on making connections with growers during the off season and working to help make farmers see DOA as a resource for help.
- **Larry Steckel**, University of Tennessee - Extension weed specialist. Has handled about 500 complaints, mostly dicamba. Better than in 2016 but agrees many are not being reported. Has worked with Tom Uhler on drift movement in field.
- **Scott Senseman**, University of Tennessee - Interim dean. Led WSSA workshop on dicamba topics when president in 2018.
- **Cameron Douglass**, USDA - weed scientist agronomist at USDA, works with pesticide registration.
- **Vijay Nandula, USDA** – Researchers in weed biology and herbicide physiology and resistance. Recently made the move to Kansas City and is interested in the group's work.
- **Kay Rentzel**, US Sweet Potato, Peach Council, and Southeastern Fruit Processors - Interested in seeing what the group is doing.
- **Tierry Besançon**, Rutgers – Current project is looking at 12 specialty crops in greenhouse setting, examining drift damage and effects of transplanting and growth stage. Work should be done next year.
- **Maggie Wasacz**, Rutgers – Has worked on two recent studies on drift impact. Finished a greenhouse study on relative sensitivity of several vegetable crops. Now moving to field studies and looking at drift yield effects on eggplants, snap beans, cucumber.
- **Lynn Sosnoskie**, Cornell - Works with trees, vines, and fresh market vegetables. Took multiple calls about drift damage and carry over this year. Is partnering with Thierry Besançon at Rutgers

looking at yield impact on snap beans and is building a new webpage and training module on drift.

- **Dwight Lingelfelter**, Penn State - Works with agronomic and vegetable crops. No drift research there at present, but Pennsylvania is getting more complaints and he wants to stay informed.
- **John Wallace**, Penn State – works in field crops but have heard from grape specialists that drift issues are happening. Pennsylvania has a relatively small veg production industry but they are concerned. Difficulty in tracking drift source is an issue.
- **Jill Schroeder**, New Mexico State University – Retired, but still active in WSSA. Interested in dicamba research.